

REMARKS

Claims 1-7 are pending in the present application and favorable action on the merits is earnestly solicited at present.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-3 and 5-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over **Isozaki US'369** (US 6,337,369) in view of **Albert et al. US'561** (US 3,254,561) and in further view of **Dempo US'178** (US 5,512,178).

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over **Isozaki US'369** in view of **Albert et al. US'561** in view of **Dempo US'178** and further in view of **Tsuchimoto et al. US'939** (US 2003/0197939).

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over **Isozaki US'369** in view of **Albert et al. US'561** in view of **Dempo US'178** and further in view of **Isozaki et al. US'960** (US 2004/0089960).

Reconsideration and withdraw of each of the above rejection are respectfully requested based on the following considerations.

Legal Standard for Determining Prima Facie Obviousness

M.P.E.P. § 2141 sets forth the guidelines in determining obviousness. First, the USPTO has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;

- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

Graham v. John Deere, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the USPTO has to provide some rationale for determining obviousness. MPEP § 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Exemplary rationales that may support a conclusion of obviousness include:

- (a) *combining prior art elements according to known methods to yield predictable results;*
- (b) *simple substitution of one known element for another to obtain predictable results;*
- (c) *use of known technique to improve similar devices (methods, or products) in the same way;*
- (d) *applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;*
- (e) *“obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success*
- (f) *known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;*
- (g) *some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.*

As the M.P.E.P. directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See M.P.E.P. § 2143.03.

Present Invention and Its Advantages

The method for producing a polarizing film of the present application comprises the step of supplying a polyvinyl alcohol film in/on which iodine is adsorbed and oriented in an aqueous solution containing boric acid and dipping and treating the polyvinyl alcohol film with the aqueous solution. This method is characterized in that an absorbance of the aqueous solution at a wavelength of 450 nm is maintained in a range of 0.13 or less. The method of the present application can easily produce a polarizing film having a higher contrast than conventional polarizing films.

For the USPTO's ease of review, instantly pending claims 1-7 of the application are reproduced below:

- 1. A method for producing a polarizing film comprising the step of supplying a polyvinyl alcohol film in/on which iodine is adsorbed and oriented in an aqueous solution containing boric acid and dipping and treating said polyvinyl alcohol film with said aqueous solution, wherein an absorbance of said aqueous solution at a wavelength of 450 nm is maintained in a range of 0.13 or less.*
- 2. The method according to claim 1, wherein said aqueous solution containing boric acid is recycled while maintaining the absorbance of the aqueous solution at a wavelength of 450 nm in a range of 0.13 or less.*
- 3. The method according to claim 1, wherein the absorbance of said aqueous solution containing boric acid at a wavelength of 450 nm is maintained in a range of 0.13 or less by continuously or intermittently treating said aqueous solution with activated carbon.*
- 4. The method according to claim 1, wherein a weight ratio of water:boric acid:potassium iodide in said aqueous solution containing boric acid is usually 100:(2-15):(2-20).*

5. *The method according to claim 1, wherein a temperature of said aqueous solution containing boric acid is from 55°C to 85°C, and a dipping time is from 90 seconds to 1,200 seconds.*

6. *The method according to claim 1, wherein said polyvinyl alcohol has a polymerization degree of 1,500 to 5,000.*

7. *The method according to claim 1, wherein said polyvinyl alcohol film in/on which iodine is adsorbed and oriented is a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in water and then dipping it in a solution containing iodine and potassium iodide, a film produced by dipping an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide and then uniaxially stretching it, a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide, a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a plurality of dipping steps, or a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a dry state and then dipping it in a solution containing iodine and potassium iodide.*

Distinctions Over the Cited Art

Isozaki US'369 discloses a process for producing a polarizing film, and describes the concentrations of boric acid, potassium iodide and zinc chloride in an aqueous solution, the treatment temperature (30°C) of the film (polyvinyl alcohol film) in an aqueous solution and the treating time (5 minutes dipping) in the Examples. However, **Isozaki US'369** does not describe or suggest any absorbance of the aqueous solution at a wavelength of 450 nm or does not teach to maintain this absorbance at a specific value or less.

Albert et al. US'561 discloses a process for polarizing ultraviolet light. That is, the polarizing film of **Albert et al. US'561** has the polarizing characteristics in the UV region, while the polarizing film produced by the method of the present invention has the polarizing characteristics in the visible light range. Therefore, the technical field of **Albert et al. US'561** is

different from that of the present invention. Consequently, the properties to be required for the polarizing films are different from each other.

In the process of **Albert et al. US'561**, the oriented and stained film is treated with an iodine reducing reagent such as sodium thiosulfate in order to increase the transmittance and dichroism in the ultraviolet light region of the polarizing film (*see column 1, lines 42-53 and claims 1 and 2 (reproduced below)*).

It has been found in the present invention that the transmittance and dichroism in the ultraviolet light region of such iodine hydroxy-substituted linear polymer polarizers can be substantially increased by treating such polarizers subsequent to their formation with an iodine reducing reagent, that is, a reagent which will reduce iodine to an iodide. Reducing reagents which will react with iodine in this manner are well known. As examples of such reagents, mention may be made of sodium sulfite, sodium sulfide, stannous chloride, ferrous chloride and sodium thiosulfate. Especially useful results have been obtained through the use of sodium thiosulfate.

What is claimed is:

1. A process for polarizing ultraviolet light, said process comprising molecularly orienting and uniformly staining with iodine a film of a hydroxy-substituted linear polymer, subsequently treating the resulting oriented and stained film with a reagent for reducing iodine to iodide, and directing ultraviolet light through said film.

2. A process as defined in claim 1 wherein said reagent is sodium thiosulfate.

However, **Albert et al. US'561** does not describe or suggest any absorbance of the aqueous solution at a wavelength of 450 nm.

Dempo US'178 discloses a water treatment method and an apparatus therefore. Thus, the technical field of **Dempo US'178** is totally different from that of the present invention.

Dempo US'178 specifically discloses only a water treatment apparatus having the activated-carbon filtering unit.

The USPTO may think that it would have been obvious to control the absorbance of an aqueous solution containing boric acid at a wavelength of 450 nm since **Albert et al. US'561** discloses a method for producing a polarizing film having the polarizing characteristics in the UV region. However, it is submitted that the USPTO may misunderstand the disclosures of **Albert et al. US'561**.

First, as is well known, the UV rays have a wavelength in the range of 10 to 400 nm. **Albert et al. US'561** describes that "Similar substantial improvements in the dichroism and transmittance are noted throughout the 260-400 millimicron region." (*see column 3, lines 20-22 (reproduced below)*).

Similar substantial improvements in the dichroism and transmittance are noted throughout the 260-400 millimicron region. 20

Differently, in the present invention, the absorbance of the aqueous solution is controlled at a wavelength of 450 nm, which is in the visible light range. In general, the violet light is in the wavelength range of 380 to 450 nm, and the blue light is in the wavelength range of 450 to 495 nm.

In this regard, the USPTO may misunderstand that the light having wavelength of 450 nm is in the UV region.

The polarizing film of **Albert et al. US'561** is used for polarizing the UV rays, while the polarizing film of the present invention is used for polarizing the visible light.

Because of the above misunderstanding, the Applicants believe that there is no valid reason for the USPTO to cite and apply the teachings and disclosure of **Albert et al. US'561** against the present invention being claimed.

Second, although **Albert et al. US'561** discloses that the polarizing film produced by the method described therein has the polarizing characteristics in the UV region, **Albert et al. US'561** does not describe or teach the control of the absorbance of the aqueous solution at a wavelength of 450 nm.

The USPTO describes, in page 3, lines 8-9 of the Office Action, “*utilizes ultraviolet light through the film in the solution (col. 4, lines 5-15)*”. As such, the USPTO may understand that the UV ray is applied during the dipping of the film in the aqueous solution containing boric acid. However, claim 1 in **Albert et al. US'561 (reproduced above)** describes that “*directing ultraviolet light through said film*” in the process for polarizing ultraviolet light. **Albert et al. US'561** does not describe to “utilize ultraviolet light through the film in the solution”, that is, applying ultraviolet light to the film which is being treated with the aqueous solution containing boric acid. Again, Applicants submit that the USPTO has no valid reason to cite **Albert et al. US'561** against the present invention.

Consequently, it is submitted that the USPTO's reading and understanding of the prior art in the instant matter is incorrect and thus the USPTO's rejection of the present invention

based on such incorrect reading and understanding is unreasonable, and should properly be reconsidered and withdrawn.

In conclusion, it is earnestly submitted that the present invention as claimed is not obvious from **Isozaki US'369** in view of **Albert et al. US'561** and in further in view of **Dempo US'178**. In this regard, the applied art fails to provide those skilled in the art with any reason or rationale that would allow them to arrive at the instant invention as claimed, and the advantageous properties that are possessed thereby.

Provisional Nonstatutory Obviousness-Type Double Patenting Rejection

Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 and 8-10 of copending Application No. 10/538,079.

In accordance with the provisions of MPEP §804 I. B. 1, the Examiner is requested to follow the following procedure:

If a "provisional" nonstatutory obviousness-type double patenting (ODP) rejection is the only rejection remaining in the earlier filed of the two pending applications, while the later-filed application is rejectable on other grounds, the examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer....

If "provisional" ODP rejections in two applications are the only rejections remaining in those applications, the examiner should withdraw the ODP rejection in the earlier filed application thereby permitting that application to issue without need of a terminal disclaimer.... If both applications are filed on the same day, the examiner should determine which application claims the base invention and which application claims the improvement (added limitations). The ODP rejection in the base application can be withdrawn without a terminal disclaimer....

Alternatively, the USPTO is respectfully requested to hold the provisional rejection in abeyance until allowable subject matter is indicated.

CONCLUSION

Based upon the amendments and remarks presented herein, the USPTO is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims 1-7 is allowable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey, Reg. No. 32,881 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted.

By 

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